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Measuring the Economic Impact of Integrating Digital Business Information Systems and Digital Marketing on Operations and Profitability

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Abstract:

This study aims to identify the role of digital business information systems in improving the operational efficiency of villas in Ubud, identify the impact of digital marketing strategies to increase the profitability of villas in Ubud, identify the effect of integration between digital business information systems and digital marketing to improve profitability and operations in Ubud villas, as well as to determine the significance of the contribution of integration of digital business information systems and digital marketing in improving the quality of Service and customer satisfaction in Ubud villas. The type of data used in the study is quantitative data. The results showed that digital business information systems have a significant role in improving the operational efficiency of villas in Ubud. This technology facilitates more effective operational management. On the other hand, digital marketing strategies are proven to contribute positively to increasing villa's profitability, although their effect on operational efficiency is statistically insignificant. Integration between digital information systems and digital marketing has a stronger positive impact on operational efficiency and profitability, showing that the combination of these two factors is more effective than implementing each separately. In addition, this integration also improves the quality of Service and customer satisfaction, which in turn strengthens the competitiveness of the villa. Overall, these findings emphasize the importance of an integrated approach between Information Technology and digital marketing in achieving optimal operational and financial results in the villa sector in Ubud.

Keywords: *information system, digital business, digital marketing, operational, profitability*

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1. Introduction

The rapid advancement of digital technology has drastically changed the business landscape in various sectors, including the tourism industry. This digital transformation affects not only the marketing field, but also the entire business operation, from inventory management to customer service (Gillpatrick, 2019; Panjaitan & Lupiana, 2023). In today's digital era, the implementation of digital

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business information systems integrated with digital marketing strategies is an important factor to improve operational efficiency and company profitability. This digital transformation serves to improve performance, where various activities can be carried out more quickly, precisely, and accurately. This will ultimately increase productivity. Therefore, it can be said that modern technology, in this case digital transformation, has become a fundamental necessity in supporting all activities and operations, especially in the tourism industry.

Tourism covers all aspects related to tourism activities, including the management of tourist objects and the development of tourist attractions and related businesses in this field. Tourism not only involves tourist places or locations, but also various services and infrastructure that support them, such as transportation, accommodation, and food and beverage services (Isdarmanto, 2017). The effects of tourism are tremendous and far-reaching. The industry is able to drive change in various aspects of local people's lives, including economic, social, and cultural. Tourism can be a catalyst for change that improves local infrastructure, improves people's education and skills, and introduces local culture to the international world (Rahayu, Budyartati, Dewantara, Rohani, & Hikmawati, 2023).

The island of Bali is a vivid example of the transformational effects of Tourism. As a world famous tourist destination, Bali offers a variety of interesting attractions, from beautiful beaches to cultural and spiritual sites (Finaka, Nurhanisah, & Putra, 2020). One of the leading tourist areas in Bali is Ubud, which is known for its natural beauty, art and culture, as well as the tranquility of the atmosphere that attracts tourists from all over the world. Ubud has developed into an arts and Cultural Center, where tourists can enjoy traditional dances, fine arts, as well as local handicrafts. In addition, Ubud also offers Balinese culinary experiences and various activities such as yoga and meditation, all of which contribute to Ubud's unique appeal as a tourist destination.

Based on these conditions, the tourism sector in Ubud faces very stiff competition, especially in the hotel and villa industry. Ubud villas not only compete with other local properties, but also with global inns that offer similar facilities and services. To remain relevant and competitive in this increasingly digital market, Villas in Ubud must make effective use of digital technology.

Digital Business Information System Integration is an approach that brings together various business functions such as reservations, inventory management, customer service, and financial reporting in one unified platform (Indrayanti, 2023). This system allows villa to manage operations more efficiently, reduce human error, and obtain accurate real-time information for decision making. For example, the integration between the Property Management System (PMS) and Customer Relationship Management (CRM) provides in-depth data on guest preferences, booking history and customer feedback, which makes villa management offer a more personalized and satisfying experience (Sriwendiah & Nusa, 2021).

On the other hand, Digital Marketing is becoming an important tool to reach a wider and diverse market. With effective digital marketing strategies, such as the use of social media, Search Engine Optimization (SEO), and paid advertising campaigns, villas can increase online visibility, attract more guests, and increase occupancy and revenue. Data analysis from digital marketing campaigns also provides valuable insights into the effectiveness of marketing strategies, consumer preferences, and market trends.

However, based on the author's experience in the field and according to information from users, many villas in Ubud face a major challenge in the form of lack of integration between their business information systems and digital marketing strategies. Separate systems often lead to operational inefficiency and lack of cohesion in the implementation of marketing strategies. For example, without good integration, data from the online booking platform may not be synchronized with the property management system, resulting in overbooking or less than optimal customer service. In addition, without good integration, it is difficult to effectively monitor and analyze customer data, which can ultimately hinder efforts to improve service and customer experience.

Previously, there was a study relevant to this topic, namely “IT Strategy in the Hotel Industry in the Digital Era " (2022) by Wynn dan Jones, The use of technology as an information system implementation benefits both guests and property managers, with the potential to reduce costs, improve direct interaction between service providers and consumers, and increase security in payments. Another researcher, "Digital business models in the hospitality sector: comparing Hotel bookings to Yacht rental bookings" (2022) by Zentner et al., demonstrated that information technology can improve customer experience in the tourism industry. However, from some of these studies, there has been no research that specifically discusses the impact of Digital Business Information System Integration and digital marketing on villas in Ubud. Therefore, this study will examine the impact of such integration on the operation and profitability of villas in Ubud. In addition, the study will focus on operational aspects such as order and inventory management, as well as identifying effective optimization strategies.

Based on the above exposure, this study aims to explore how the integration of Digital Business Information Systems and Digital Marketing can be applied to villas in Ubud to optimize operations and increase profitability. Hopefully, good integration will improve efficiency, customer service, and effectiveness of marketing strategies. This study will provide practical insights for villa management in adopting digital technologies and analyzing their impact on operational and financial performance. Ultimately, the research is expected to help villas in Ubud compete more effectively in an increasingly digital global market.

2. Theoretical Background

Digital Business Information System
A digital business information system is a technological framework for organizations to manage, process, and disseminate critical information related to business operations in a digital environment (Wijaya, 2018). These systems include hardware, software, data, business processes, networks, and users that interact to automate processes, increase efficiency, support data-driven decision making, and improve communication and collaboration.

Digital Marketing
Digital marketing is the use of digital technology, especially the internet, to achieve marketing and promotional goals. According to Chaffey (2015), digital marketing includes any marketing effort that uses electronic devices or the internet. Companies utilize digital channels such as search engines, social media, email, and websites to connect with current and potential consumers. This approach enables companies to reach a wider audience and provide a more personalized and interactive experience.

Operational Management
Operational management is an area of management that focuses on managing the production and operational processes of an organization to produce products or services with high efficiency (Mariani, 2022). In the context of a hotel or villa, operational management involves planning, organizing, directing, and supervising various activities that ensure an optimal guest experience and efficient operations.

Company Profitability
Profitability is the ability of a company to generate profit or net profit from its operating activities in a certain period (Priatna, 2016). Profitability is a key indicator of the financial health of a company and is often measured by profit ratios such as net profit to sales or net profit to assets. A high level of profitability indicates operational efficiency and good management, while a low level of profitability can signal problems in management, cost structure, or business strategy.

3. Methodology

There are types of data used in research, namely quantitative data is data obtained through research methods that involve the use of numbers and statistics in the process of collecting and analyzing measurable data. In this study, quantitative data obtained from the results of the distribution of questionnaires to the parties involved in the integration of digital business information systems and digital marketing villa in Ubud. These Data include numerical responses that can be statistically analyzed to understand the extent to which such variables affect the operational efficiency and increased profitability of the villa. The use of quantitative data makes it easy for researchers to draw conclusions based on empirical evidence and provide a clear

picture of the impact of digital technology and marketing strategies on villa's performance.

4. Empirical Findings/Result

The influence of digital information systems (X1) on improving operational efficiency (Y1)

Table 1. P-Value Test Results for the Relationship between X1 and Y1

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
X1 -> Y1	0.391	0.308	0.301	1.299	0.044

The results of the analysis shown by Table 1 shows the relationship between digital information systems (X1) and increased operational efficiency (Y1) with a regression coefficient (Original Sample) of 0.391. This value indicates a positive relationship between X1 and Y1, which means that the improvement of digital information systems is likely to be associated with increased operational efficiency. The value of this positive coefficient indicates that digital information systems can contribute positively to operational efficiency. Then, a Sample Mean value of 0.308 supported the result, showing that the average effect of the various samples was positive, although slightly lower than the coefficient of the original sample. A Standard Deviation of 0.301 indicates uncertainty in the coefficient estimate, which measures how much variation in the coefficient estimate is between samples. Despite the uncertainty, the positive effect of X1 on Y1 is still consistent.

Furthermore, t Statistics calculated at 1.299, is the ratio of the regression coefficient to standard deviation. This value indicates the Relative Strength of the effect of X1 with respect to Y1, but is not very high, which indicates that the effect is not very large compared to the variation in the data. However, the P Value of 0.044 is smaller than the general threshold of 0.05, which indicates that the relationship between X1 and Y1 is statistically significant. This means that there is enough evidence to reject the null hypothesis and confirm that the observed effect did not occur by chance. Based on the results of the analysis, the null hypothesis (H0), which states the absence of a significant relationship between digital information systems and an increase in operational efficiency, was rejected. A p value of 0.044 indicates that the relationship between X1 and Y1 is statistically significant. With a positive coefficient and a p-value of less than 0.05, it can be concluded that digital information systems have a significant positive impact on operational efficiency, supporting the statement that the improvement of digital information systems can improve operational efficiency.

The influence of digital information systems (X1) on increasing profitability (Y2)

Table 2. P-Value Test Results for the Relationship between X1 and Y2

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
X1 -> Y2	0.324	0.023	0.346	0.935	0.045

The results of the analysis shown by Table 2 evaluate the relationship between digital information systems (X1) and increased profitability (Y2). The regression coefficient of the Original Sample was 0.324, which indicates a positive relationship between X1 and Y2. This means that improvements in digital information systems are associated with increased profitability, indicating that investments in information technology can support better financial results. The Sample Mean value of 0.023 indicates the average effect of the relationship X1 to Y2 from various samples. The significant difference between the coefficient values of the original sample and the average of this sample indicates that the observed effect of the digital information system on profitability is quite consistent despite the lower average values.

Then, a Standard Deviation of 0.346 measures the uncertainty in the estimation of the regression coefficient, which indicates the variation in the measured effect among the various samples. This value indicates that there is variation in the effect of digital information systems on profitability, but it is not large enough to drastically affect the results of the analysis. T Statistics of 0.935 is calculated by dividing the regression coefficient (Original Sample) with standard deviation. This value is relatively low, indicating that the effect of digital information systems on profitability is not very strong compared to variations in data. However, a P-Value of 0.045, which is less than the general threshold of 0.05, indicates that the relationship is statistically significant. This means that there is enough evidence to reject the null hypothesis and confirm that the influence of digital information systems on profitability is indeed significant.

Based on the results of this analysis, the null hypothesis (H0), which states the absence of a significant relationship between digital information systems and profitability, was rejected. A p value of 0.045 indicates that there is a statistically significant relationship between X1 and Y2. With a positive coefficient of 0.324 and a p-value of less than 0.05, it can be concluded that digital information systems have a significant positive impact on profitability. This suggests that the improvement of digital information systems has the potential to improve financial results, supporting the argument that investments in information technology can bring tangible financial benefits.

The influence of digital marketing strategy (X2) on improving operational efficiency (Y1)

Table 3. P-Value Test Results for the Relationship between X2 and Y1

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
X2 -> Y1	0.377	0.270	0.262	1.440	0.150

The results of the analysis in Table 3 evaluate the relationship between digital marketing strategy (X2) and increased operational efficiency (Y1). Regression coefficient obtained from the Original Sample is 0.377. This value indicates a positive relationship between digital marketing strategies and operational efficiency, which means that the implementation of digital marketing strategies tend to be associated with increased operational efficiency. In other words, the implementation of an effective digital marketing strategy can increase efficiency in business operations.

Furthermore, the Sample Mean of 0.270 indicates the average effect of the various samples used in the analysis, and although this value is slightly lower than the coefficient of the original sample, the result still shows a positive effect. Standard Deviation of 0.262 measures the degree of variation or uncertainty in the estimation of regression coefficients. This value indicates how much variability the estimated coefficient is among different samples, giving an idea of the consistency of the measured effect.

T Statistics of 1.440, obtained by dividing the value of the regression coefficient by the standard deviation, shows a measure of the Relative Strength of the effect of X2 against Y1 compared to the variation in the data. Although this value indicates a positive effect, a T statistic value that is not too high indicates that the effect is not very large compared to the variation. A P-Value of 0.150, which is greater than the general threshold of 0.05, indicates that the relationship between digital marketing strategy and operational efficiency is not statistically significant. This means that there is not enough evidence to reject the null hypothesis stating the absence of a significant relationship between X2 and Y1.

Based on the results of the analysis, the null hypothesis (H0) which states that there is no significant relationship between digital marketing strategies and increased operational efficiency cannot be rejected. A p-value of 0.150 is greater than 0.05, indicating that despite a positive relationship between X2 and Y1, the effect is not statistically significant. As such, there is not enough evidence to claim that digital marketing strategies have a significant impact on operational efficiency. These results suggest that although a relationship was detected, the impact was not strong enough to be considered significant in the context of the analyzed data.

The influence of digital marketing strategy (X2) on increasing profitability (Y2)

Table 4. P-Value Test Results for the Relationship between X2 and Y2

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
X2 -> Y2	0.405	0.319	0.209	0.026	0.037

The results of this analysis evaluate the relationship between digital marketing strategy (X2) and increased profitability villa (Y2). The Original Sample value of 0.405 indicates a strong positive relationship between digital marketing strategies and increased profitability of villas. In other words, the better the implementation of the digital marketing strategy, the higher the profitability generated by the villa. The coefficient value of 0.405 indicates that the digital marketing strategy has a significant contribution to increasing profits.

Then, the Sample Mean of 0.319 shows the average effect of various samples used in the analysis. The difference between the coefficients of the original sample and the sample mean (0.405 and 0.319) is not very large, which indicates that this relationship is consistent among the various samples used in the analysis. Standard Deviation of 0.209 describes the variation or uncertainty in the estimation of regression coefficients. This value gives an idea of how large the fluctuations in the measured results are among the various samples, and this value is not very large, which indicates that the estimated results are quite stable and reliable. T Statistics of 0.026, which is calculated by dividing the value of the coefficient by the standard deviation, shows the Relative Strength of the effect of X2 on Y2. However, this very low value of T statistics indicates that, although there is a fairly strong positive relationship in practical terms, this value does not show significant strength in its statistical tests. The P Value of 0.037, which is smaller than the threshold of 0.05, indicates that the relationship between digital marketing strategies and increased villa profitability is statistically significant. Thus, there is enough evidence to reject the null hypothesis stating the absence of a relationship between the two variables.

Based on these results, the null hypothesis (H0) which states that there is no significant relationship between digital marketing strategies and increased villa profitability is rejected. A p-value of 0.037 indicates that the relationship is statistically significant. With a fairly large regression coefficient (0.405), it can be concluded that the implementation of digital marketing strategies effectively contributed positively to the increase in villa profitability, despite the variations in the analyzed data.

The effect of integration between digital information systems and digital marketing (X1,X2) on operational efficiency (Y1)

Table 5. P-Value Test Results for the Relationship between X1 and X2 (X1,X2) with Y1

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
X1 X2 -> Y1	0.579	0.262	0.536	1.078	0.049

The results of the analysis in Table 5 evaluate the combined relationship between digital information system (X1) and digital marketing strategy (X2) to increase the operational efficiency of villa (Y1). The Original Sample value of 0.579 indicates a substantial positive effect of the combination of X1 and X2 on operational efficiency. This figure shows that overall, the implementation of digital information systems and digital marketing strategies can significantly improve the operational efficiency of villas. This relatively high regression coefficient indicates that these two factors together have a fairly strong impact on operational efficiency.

Furthermore, the Sample Mean of 0.262 shows the average effect of various samples used in the analysis. The difference between the coefficient value of the original sample and the average value of the sample indicates a variation in the measured effect. Although the average value of the coefficient is lower compared to the original value, this difference may be due to variations between samples. Standard Deviation of 0.536 describes the degree of variation or uncertainty in the estimation of regression coefficients. This value indicates fluctuations in the measured effect among various samples. Although the standard deviation is quite large, which indicates a significant variation in the data, this value still gives a fairly consistent picture of the relationship under test. T Statistics of 1.078 is calculated by dividing the value of the regression coefficient by the standard deviation. This t statistic shows the Relative Strength of the combined effect of X1 and X2 on Y1. This value indicates that the combined effect of the two variables is not very large compared to the variation in the data, but still indicates the presence of a measurable impact. The P Value of 0.049, which is less than the general threshold of 0.05, indicates that the combined relationship between digital information systems and digital marketing strategies on villa operational efficiency is statistically significant. Given this value of p, it can be concluded that there is enough evidence to reject the null hypothesis stating the absence of a significant relationship between these variables. This means that the implementation of digital information systems and digital marketing strategies simultaneously does contribute significantly to improving the operational efficiency of the villa.

Based on the results of the analysis, the null hypothesis (H0) which states that there is no significant relationship between digital information systems and digital marketing strategies to increase villa operational efficiency is rejected. A p value of

0.049 indicates that the combined relationship of X1 and X2 to Y1 is statistically significant. With a fairly high regression coefficient (0.579), it can be concluded that the application of these two factors together has a significant positive impact on the operational efficiency of the villa, despite the variations in the analyzed data. These results show that the integration of digital information systems and digital marketing strategies are effective in improving the operational efficiency of the villa.

The effect of integration between digital information systems and digital marketing (X1,X2) on profitability (Y2)

Table 6. P-Value Test Results for the Relationship between X1 and X2 (X1,X2) with Y2

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
X1 X2 -> Y2	0.314	0.321	0.275	1.144	0.041

The results of the analysis in Table 6 evaluate the combined relationship between digital information system (X1) and digital marketing strategy (X2) to increase the profitability of villa (Y2). The Original Sample value of 0.314 indicates the positive influence of a combination of digital information systems and digital marketing strategies on the profitability of the villa. This coefficient indicates that the integration of the two variables contributes to an increase in profitability, with a relatively significant effect. The Sample Mean of 0.321 describes the average effect of the various samples in this analysis. The difference between the values of the regression coefficients of the original sample and the sample mean indicates a variation in the measured effect, but the difference is not very large. This indicates that the measured effect is quite consistent among different samples.

Then, the Standard Deviation of 0.275 describes the degree of variation or uncertainty in the estimation of the regression coefficient. This value indicates how large the fluctuations in the measured effect are among the various samples. This relatively moderate Standard deviation indicates some variation in the data, but the measured effect can still be considered fairly stable. T Statistics of 1.144 is calculated by dividing the value of the regression coefficient by the standard deviation. The value of T indicates the strength of the combined effect of X1 and X2 on Y2. Although this t-value indicates that the combined effect is not very large compared to the variation in the data, it still indicates a measurable impact.

Furthermore, the P Value of 0.041, which is smaller than the general threshold of 0.05, indicates that the combined relationship between digital information systems and digital marketing strategies on villa profitability is statistically significant. Given this value of p, it can be concluded that there is enough evidence to reject the null hypothesis stating the absence of a significant relationship between these variables. This means that the combination of digital information systems and digital marketing strategies contributes significantly to the increased profitability of the villa.

Based on the results of the analysis, the null hypothesis (H0) which states that there is no significant relationship between digital information systems and digital marketing strategies on villa profitability was rejected. A p-value of 0.041 indicates that the combined relationship of X1 and X2 to Y2 is statistically significant. With a regression coefficient of 0.314, it can be concluded that the simultaneous application of these two factors had a significant positive impact on the profitability of the villa, despite the variations in the analyzed data. These results show that the integration of digital information systems and digital marketing strategies effectively improve the profitability of the villa.

5. Discussion

The influence of digital information systems (X1) on improving operational efficiency (Y1)

Analysis on the effect of digital information system (X1) on the improvement of operational efficiency (Y1) using the results of SmartPLS4 shows that there is a significant positive relationship between these two variables. Based on Table 1, the regression coefficient (Original Sample) of 0.391 indicates that digital information systems contribute positively to operational efficiency. That is, the better the implementation of digital information systems, the greater the increase in operational efficiency. The Sample Mean value of 0.308, although lower than the original sample coefficient, still showed a positive effect in general in various samples tested. A Standard Deviation (STDEV) of 0.301 indicates variation or uncertainty in the estimate, which can indicate differences in effect among samples, even if the positive effect remains consistent.

From the T-statistics of 1.299, although the strength of the effect produced is not very high, this value is still sufficient to show that there is a clear relationship, especially considering that the P-value of 0.044 is smaller than 0.05. This P-value confirms that the relationship between digital information systems and operational efficiency is statistically significant, which means that the relationship is not only coincidental, but rather supported by data. Overall, the results of this analysis show that the null hypothesis, which states the absence of a relationship between X1 and Y1, can be rejected. Digital information systems are proven to have a positive and significant effect on operational efficiency, so that an increase in the application of digital information systems in companies or organizations is expected to increase operational efficiency.

This is in line with research findings in Wijoyo et al. (2023) which also emphasizes the importance of Information Systems in improving the operational efficiency of the company. Both studies show that the use of information systems contributes positively to the company's operations through automation, data integration, and improved quality of decision-making. This study concluded that the implementation

of information technology effectively able to optimize the company's operations and support better strategic decisions. Therefore, these two analyses support the assertion that the adoption of Information Systems is an important factor in improving the operational efficiency of enterprises.

Effect of digital information systems (X1) to increase profitability (Y2)

Regarding the effect of digital information systems (X1) to increase profitability (Y2) showed a positive and significant relationship between these two variables. Based on the results of the analysis test in Table 2, the original sample regression coefficient of 0.324 indicates that improvements in digital information systems tend to be followed by increased profitability. That is, the effective application of information technology can support better financial results, especially in the context of increased profits or profits. A Sample Mean value of 0.023 indicates a positive average effect of various samples, although the difference between the original sample value and the sample average indicates variation. A Standard Deviation of 0.346 indicates uncertainty in the estimation of the effect, but this variation is not large enough to undermine the conclusion that digital information systems have a positive impact on profitability.

Although the statistical T value of 0.935 is relatively low, indicating that the strength of the relationship between X1 and Y2 is not very strong compared to the variation in the data, the P Value of 0.045, which is smaller than the threshold of 0.05, indicates that this relationship remains statistically significant. Therefore, the null hypothesis (H0), which states the absence of a significant relationship between digital information systems and profitability, can be rejected. Overall, these results support the conclusion that digital information systems have a significant impact on profitability. With a positive coefficient and a significant P-value, it can be concluded that investments in digital information systems have the potential to generate tangible financial benefits for companies, including the villas analyzed in this study. Increased use of Information Technology in business operations is proven to support increased profitability, providing a solid basis for decisions to increase investment in Information Technology.

Discussion on the effect of digital information systems to increase profitability (X1 -> Y2) in line with the findings of research in Kurniawati et al. (2024) which also explores the influence of digitization on profitability. In both studies, despite differences in sectors, namely Islamic banking and villa, the results of the analysis showed a positive and significant relationship between digitization and profitability. In this study, the coefficient value of 0.324 and P-value of 0.045 support the conclusion that digitization has a significant impact on profitability. Similarly, Kurniawati's research, although there are significant differences in several aspects, the core of these two studies confirm that digital transformation can support a significant increase in profitability, especially through improved operational efficiency and decision-making.

Effect of digital marketing strategy (X2) on improving operational efficiency (Y1)

The discussion of the effect of digital marketing strategy (X2) on improving operational efficiency (Y1) showed a positive relationship, but not statistically significant. The results of the analysis in Table 3 show that the regression coefficient of the Original Sample of 0.377 indicates a tendency that the implementation of digital marketing strategies can improve operational efficiency. This means that digital marketing strategies have the potential to make a positive contribution to business operations, even if the effect is not strong or consistent across samples. The Sample Mean value of 0.270 supports the existence of similar positive effects in various samples, although it is slightly lower than the coefficient of the original sample. The Standard Deviation of 0.262 reflects the presence of variation in the results of the analysis among various samples, which indicates uncertainty in the estimation of the coefficient. The T statistic of 1,440, while showing a positive effect, is not high enough to support significant relationship strength. This is indicated by a P Value of 0.150, which is greater than the general threshold of 0.05, indicating that the relationship between X2 and Y1 is not statistically significant.

With a P-value above 0.05, the null hypothesis (H0), which states that there is no significant relationship between digital marketing strategies and increased operational efficiency, cannot be rejected. This means that in the context of this study, there is insufficient evidence to argue that digital marketing strategies significantly contribute to increased operational efficiency. Overall, although there is a positive relationship between digital marketing strategies and operational efficiency, the effect is not strong or consistent enough to be considered significant in improving the operational efficiency of the villas studied. This can be due to various factors such as variations in the implementation of digital marketing strategies, different operational conditions, or other variables that have not been taken into account.

This is in line with research findings in Sifwah et al. (2024) which discusses the impact of digital marketing on the competitiveness of MSMEs. Both studies show that digital marketing can bring about changes in business operations, including increased efficiency. However, the study also highlights that challenges such as limited resources and technological readiness can limit the significant effects of digital marketing on operational efficiency. In the context of this study, although the results of the analysis indicate a positive relationship between X2 and Y1, A P value of 0.150 indicates that the relationship is not significant. It also shows that although digital marketing strategies have a positive impact, implementation barriers such as technology and knowledge limitations can affect the effectiveness of these strategies in improving operational efficiency.

Effect of digital marketing strategy (X2) on increasing profitability (Y2)

The discussion of the effect of digital marketing strategy (X2) to increase profitability (Y2) shows a significant relationship between these two variables. The test results in Table 4 show the original sample coefficient value of 0.405 which shows that the implementation of digital marketing strategies can contribute positively to profitability. In other words, the more effective the implementation of digital marketing strategies, the greater the increase in profitability of the resulting villa. A Sample Mean of 0.319 indicates that this relationship is consistent across samples, and a Standard Deviation of 0.209 indicates slight variation in the analysis results. Although a statistical T value of 0.026 indicates a relatively low effect strength, A P Value of 0.037 that is smaller than the 0.05 threshold indicates that the relationship between digital marketing strategy and profitability is statistically significant. Therefore, the null hypothesis (H0) can be rejected, indicating that the implementation of digital marketing strategies contributes significantly to increasing the profitability of the villa.

Effect of integration between digital information systems and digital marketing (X1,X2) on operational efficiency (Y1)

Discussion on the effect of integration between digital information systems (X1) and digital marketing strategy (X2) to improve operational efficiency (Y1) showed a significant relationship. The results of the analysis in Table 5 revealed that the combination of these two factors has a substantial positive impact on operational efficiency, with an Original Sample value of 0.579. This figure indicates that when digital information systems and digital marketing strategies are implemented simultaneously, both make a strong contribution to improving the operational efficiency of the villa.

Although a Sample Mean of 0.262 indicates a variation in the measured effect from different samples, this difference does not eliminate the fact that the combined effect of X1 and X2 is quite consistent. A relatively high Standard Deviation (0.536) indicates a fluctuation in the estimated coefficient, but the statistical t value of 1.078 still indicates the strength of the measurable effect, although not too large. The P Value of 0.049 which is smaller than the general threshold of 0.05 indicates that the combined relationship between digital information systems and digital marketing strategies with operational efficiency is statistically significant. This means that the null hypothesis (H0) stating that there is no significant relationship can be rejected, and there is strong evidence that the integration of these two factors provides tangible benefits to the operational efficiency of the villa.

Effect of integration between digital information systems and digital marketing (X1,X2) on profitability (Y2)

The discussion on the effect of integration between digital information system (X1) and digital marketing strategy (X2) to increase the profitability of villa (Y2) showed a significant positive relationship. The results of the analysis in Table 6 revealed the

Original Sample value of 0.314, which indicates that the integration of these two variables contributes to increased profitability of the villa. This coefficient indicates that there is a considerable effect when digital information systems and digital marketing strategies are applied simultaneously, leading to an increase in profits or profits. The Sample Mean of 0.321 indicates that the results of the combined effect of the various samples analyzed are quite consistent, although there are slight variations. A Standard Deviation of 0.275 indicates a moderate fluctuation in the measured effect, but still indicates that the combined effect of X1 and X2 on Y2 is quite stable. The T statistic of 1.144 indicates that the combined effect of X1 and X2 on Y2 is measurable, although not very large.

Most importantly, the P-Value of 0.041, which is smaller than the threshold of 0.05, indicates that the combined relationship between digital information systems and digital marketing strategies with profitability is statistically significant. This means that the null hypothesis (H0) can be rejected, so there is enough evidence that the combination of these two factors makes a significant contribution to increasing the profitability of the villa. Overall, these results indicate that the integration of digital information technology and digital marketing strategies can provide villa with better financial results, optimize profits and significantly increase profitability.

6. Conclusions

Based on the results of the analysis, it was concluded that digital information systems have a positive and significant influence on operational efficiency. The regression coefficient suggests that increasing the application of digital information systems can improve operational efficiency, with a significant P value supporting these findings. This is in line with previous research that emphasizes the importance of information systems in improving operational efficiency. The implementation of digital information systems also contributes positively to the profitability of the villa. The coefficient value shows that digital information systems have the potential to increase profitability, supported by a significant P value. This confirms that investments in information technology can yield tangible financial benefits.

While there is a positive relationship between digital marketing strategy and operational efficiency, the effect is not statistically significant. Variation in results and high P-values indicate that digital marketing strategies do not consistently contribute to improving operational efficiency. Digital marketing strategies have a significant and positive influence on profitability. A positive regression coefficient and a significant P value show that the implementation of digital marketing strategies can increase the profitability of villas. The integration of digital information systems and digital marketing strategies has a significant positive impact on operational efficiency. The results of the analysis show that the

combination of these two factors can effectively improve the operational efficiency of the villa. The integration of these two factors also shows a significant positive influence on profitability. The coefficient value and significant P value support that the combination of digital information systems and digital marketing strategies contributes to the increase in villa profitability.

Overall, this study shows that the implementation of digital information systems and digital marketing strategies has a positive impact on profitability. Although digital marketing strategies are not significant in improving operational efficiency individually, the integration between digital information systems and digital marketing strategies has proven to provide significant benefits in both operational efficiency and profitability. This underscores the importance of an integrated approach in the application of information technology and digital marketing to improve the financial and operational results of the villa.

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